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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/719,136

12/07/2000

Malcolm Barry James

1075-P0005

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01/20/2011

ARC PATENTS

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EXAMINER

LUK, EMMANUEL S

ART UNIT

PAPER NUMBER

1744

NOTIFICATION DATE

DELIVERY MODE

01/20/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

joe@arciplaw.com

Office Action Summary	Application No. 09/719,136	Applicant(s) JAMES, MALCOLM BARRY	
	Examiner EMMANUEL S. LUK	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-35,44-46 and 49-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-35,44-46 and 49-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/13/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 33-35, 44-46, 49-56 are pending.
2. New rejections have been made in response to the submission of the IDS. The claims are rejected in light of the newly submitted references, particularly with the previously indicated allowable features, primarily in regards to the uniform thickness of the separating walls, and these features are taught by the Takahashi reference (JP62107853).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 33-35, 44-46, 49-56 rejected under 35 U.S.C. 103(a) as being unpatentable over Osakabe (6073683) in view of Sendt (3644110) and Takahashi (JP62107853, see IDS).

Osakabe teaches a method of cooling parts (abstract and Col. 8, line 6 to Col. 9, line 2). The apparatus having at least one completely closed chamber with air substantially removed therefrom and having a single quantity of liquid that extends to cover at least one of the areas from which heat is to be taken (Fig. 1B, 13, 3 and 7, also see Col. 2, lines 5-26 and Col. 8, lines 30-42). Each of the at least one completely closed chamber being integrated with the module 2 and a space above the single quantity of liquid and within the completely closed chamber in which pressure within the

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space is caused to be set a level which will enable the single quantity of liquid to boil at a selected temperatures, said selected temperature being at a level such that the temperature is below a temperature of the areas from which heat is to be taken this being by reason of, as a first step, filling of the completely closed chamber with the single quantity of liquid and then extracting a selected portion of the single quantity of liquid without allowing air to replace the extracted liquid, and passing at a selected cooling temperature, the single quantity of liquid through condensing means to affect, by such cooling, condensation of vapor of the single quantity of liquid in the space to return the condensed vapor to the single quantity of liquid by gravity. The member appears to be airtight sealed (Col. 10, lines 37-39).

Osakabe does not teach a mold die and the separation of the mold surface having a substantially uniform thickness through all of the walls.

However Osakabe does teach a heat generating unit 2 which the cooling apparatus 1 is attached. In addition, Sendt teaches a tool being a mold element (Col. 12, lines 13-22) including a cooling arrangement having capsules/chambers 63, 78, 90, having the phase change of a liquid to a vapor, the arrangement in a closed chamber. As seen in the figures, the cooling system is in an area adjacent to the mold walls (including 72, 73, 86, 87), the closed chamber is integrated within the mold, see Figures 4-6. The chambers configured along with the shape of the mold as seen in Figures 4-6 allows for uniform cooling of the throughout the mold surface.

Takahashi teaches the uniform thickness through all the walls which cooling is effective, see Figure 2. The mold cavity 4 having the surrounding cooling chambers 2

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having the coolant 3 (see abstract) that vaporizes and cools the mold and the gas condensing part 5 where the coolant flows back to the chambers. The coolant pressure in the chamber is the same, or lower, than the atmospheric pressure state, see abstract.

It would have been obvious for one of ordinary skill in the art to recognize the cooling apparatus of Osakabe could be utilized for cooling elements to other heat generating units such as a die mold as taught by Sendt thereby allowing for influencing the temperature of the tool (Col. 1, lines 4-9) and the uniform thickness as taught by Takahashi to ensure uniform cooling of the product formed in the mold cavity.

Sendt and Takahashi are both directed to cooling a mold element and one skilled in the art would recognize the references as being relevant for cooling of a mold. Okasabe is relevant as it directs to cooling of a part and one skilled in the art would be directed to the cooling arts for use in the cooling of a mold parts.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMMANUEL S. LUK whose telephone number is (571)272-1134. The examiner can normally be reached on Monday-Fridays from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogendra N Gupta/
Supervisory Patent Examiner, Art Unit 1791

EL